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A DESCRIPTION OF THE

# BUTTERFLIES OF JAPAN.

BY

H. PRYER.

YOKOHAMA:

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# RHOPALOCERA NIHONICA.

Order LEPIDOPTERA.

Sub-order RHOPALOCERA.

The order Lepidoptera is divided into two sub-orders, Rhopalocera and Heterocera. The former includes all the butterflies and the latter all the moths. Butterflies can be roughly distinguished from moths by the following points:—They are almost without exception day flyers, and always have more or less clubbed antennæ. Moths fly day and night, and generally have simple or pectinated antennæ. This is not, however, an invariable rule, as we have many families of moths with antennæ thickened towards the point.

This book treats of the butterflies only, and is the result of sixteen years' constant attention to the group in every part of these islands.

The butterflies of Japan are a particularly interesting study, not alone to the Entomologist, but also to the general student. We have in this country direct evidence of the *transmutation of species*, many Japanese butterflies appearing under perfectly distinct alternate forms at different times of the year; these forms of the same insect are often more distinct than undoubted species of the same family. I have proved, by breeding, that this multiplicity of form is caused by temperature affecting the insect during its larval stage, and I have produced them artificially. I have styled them *temperature forms*. The reason of these strange temperature forms appearing naturally, in Japan, is primarilly owing to the exceptional amount of change in climate which takes place during the year, and also to the geographical position and conformation of this country. It is, and has been for long ages, a veritable battlefield in the *struggle for existence* for the species inhabiting it. At a not very remote period, geologically considered, these islands appeared above the waves as a chain of high mountain peaks, relics of an ancient continent, similar in appearance to what we see the Kurile Islands now are on the map; the spaces between these old peaks have been filled in principally by recent volcanic agency.

The fauna is decidedly Palæarctic, but we have a good many wanderers from the Oriental region. We have in Japan an admixture of tropical, temperate, and arctic species meeting together in the same area, many of which still continue to find their way here by different routes, this being doubtless the cause of another peculiarity in the Japanese fauna, to which I have called attention under the heading of "dual" or twin species. That communication is continuous, is evident from the fact that we find some species presenting no points of difference, while in others it is most marked; the former are able to breed true to their ancestral type, owing to frequent immigration, and those which differentiate most strongly have been isolated longest. Butterflies exhibit forms in process of transmutation in greater numbers than perhaps any other class of organizations, for, from their structure and wandering habits, they are able to spread over large areas, and, during the space of a single year, many species pass through several generations. They are thus constantly subjected, in the never-ceasing battle of life, to ever-varying conditions of existence.

I have met with some amount of opposition to my views on this subject from the hands of closet naturalists, who are accustomed to "museum series" only, the dispute between the field observer and the book-making describer being, even yet, very keen.

So many new systems of classification having been proposed of late years, I think I need not apologize for using in this book an old one, which, notwithstanding many defects, is at any rate the most convenient for my purpose.

My specimens have all been named by Messrs. Butler and O. Janson, and I am therefore not accountable for any errors in nomenclature, but at the same time I must call attention to the fact that many specimens named as distinct by Mr. Butler have afterwards proved to be forms of long known species, and, where I have been able to detect these errors, I have included them in the list of synonyms.

The following Families are represented in Japan:—

| | | |
|---|---|---|
| Papilionidæ | 11 | species. |
| Pieridæ | 12 | ,, |
| Lycænidæ | 36 | ,, |
| Lemoniidæ | 1 | ,, |
| Nymphalidæ | 38 | ,, |
| Danaidæ | 1 | ,, |
| Satyridæ | 18 | ,, |
| Hesperidæ | 20 | ,, |

## Family PAPILIONIDÆ.

### Genus PAPILIO.

1. **Papilio machaon, L.** (Pl. 1, fig. 1-A, 1-B.)

*asiatica*, But.
*hippocrates*, Feld.

Localities—Main Island, Yezo.
Food plants—Cultivated umbelliferæ, carrot, fennel, &c.
Time of appearance—From March until the end of summer.

The first imago appear in March from larva which have fed up late in the preceding autumn. These March specimens are invariably small and light colored (fig. 1-B), and are the *machaon* form. As the summer advances the successive broods increase in size and depth of coloration until August, when the *hippocrates* (fig. 1-A) form appears. It is a very abundant insect, and often strips fields of carrots of their leaves.

2. **Papilio xuthus, L.** (Pl. 1, fig. 2-A, 2-B.)

*xuthulus*, Brem.

Localities—Main Island.
Food plants—Ægle sepiaria D.C., Xanthoxylon schinnifolium S. & Z.
Time of appearance—From March until the end of summer.

Like the preceding species, we have an early spring form, *xuthulus* (fig. 2-A), and a summer form, *xuthus* (fig. 2-B). *Machaon* is a plant feeder, *xuthus* a tree feeder. The larva of the two species are very different in appearance, the difference being greater even in the larval stage than in the imago. The female of *xuthus* is dimorphic, one form being light yellow and the other much darker.

3. **Papilio maacki, Men.** (Pl. 1, fig. 3.)

*dehaani*, Feld.
*bianor var japonica*, But.
*tutanus*, Fenton.

Localities—Yokohama, Yezo, and the mountains of the Main Island generally.
Food plant—Ægle sepiaria and other kinds of orange trees.
Time of appearance—From April until the end of summer.

This beautiful insect varies greatly, from green to purple blue; some specimens have a row of red spots on the hind wing which is absent on others. It also varies greatly in size and markings. This species extends furthest north of any of the black Papilios. It is an extremely difficult insect to figure. The larva very much resembles that of *P. xuthus*, although the perfect insect differs so greatly.

4. **Papilio demetrius, Cr.** (Pl. 3, fig. 1.)

Localities—Main Island.
Food plant—Ægle sepiaria, D.C.
Time of appearance—From April until the end of summer.

The larva is very similar to those of the two preceding species, exactly reversing the case of *machaon* and *xuthus*. The hind wing of the male is ornamented with an oval greenish-white patch concealed below the fold of the fore wing. This is, as a rule, hardly visible, but is displayed by the male when courting his mate. *Demetrius* and *macilentus* are perhaps "dual" species.

5. **Papilio macilentus, Janson.** (Pl. 3, fig. 2.)

Localities—Rare about Yokohama, but more abundant in the mountains of the Main Island.
Time of appearance—From May and during summer.

The female is very seldom to be obtained. The male, which is ornamented exactly as in the preceding species, is, in its first brood, often very diminutive, and I have captured them less than half the size of the female specimen figured. I have not yet found the larva. This species is specially adapted to fertilizing Lilies, the pollen from the flowers, which it frequently visits, adhering to its long hind wings and tails.

6. **Papilio alicinous, Klug.** (Pl. 3, fig. 3.)

Localities—Main Island.
Food plant—Cocculus thunbergii, D.C.
Time of appearance—From April until the end of summer.

The female of this species is dimorphic in China and the Ryukyu Islands, being sometimes nearly as black as the male, and sometimes buff, but I have never seen any but the last-named form in Japan. The male emits a peculiarly sweet, musky odour when alive. The female also emits a fainter odour, but to me this is as unpleasant as that of the male is pleasant. It is one of the most abundant Papilios, and is easily caught. The larva resembles a partially ripe mulberry, and the pupa is most beautifully sculptured.

7. **Papilio helenus, L.** (Pl. 2, fig. 2.)

Localities—Nagasaki and Tosa.
Time of appearance—May and summer.

This is a southern insect, and I have not seen it further north than the Island of Shikoku. The large white patch on the hind wing makes it a very conspicuous object. It has a fine rapid, bold flight, and constantly returns to the same spot. The female is rare.

8. **Papilio memnon, L.** (Pl. 2, fig. 1.)

Localities—Nagasaki.
Time of appearance—May and summer.

This is the largest Japanese butterfly. I have not seen it, in Japan, north of the Island of Kyushyu.

The male is much less ornamented than the female, and is generally jet black, with a faint red patch at the base of the fore wing. The female is very conspicuous, and, from the contrast of its colours, appears much larger than it really is when on the wing. A tailed form is found in China, but I have not seen it in Japan. Those females I have seen here are also darker than Chinese specimens.

9. **Papilio sarpedon, L.** (Pl. 1, fig. 9.)

Localities—Main Island.
Food plant—Machilus thunbergii Z. and S.
Time of appearance—April until the end of summer.

Very abundant. The larva feeds on the young leaves of the evergreen Machilus, their colour resembles very closely that of the young green leaves of this tree.

10. **Luedorfia puziloi, Ersch.** (Pl. 1, fig. 10.)

Localities—Yezo, Gifu.
Time of appearance—Early in April.

This is a rare insect, and I have not yet seen a perfect specimen. It is found early in the year on high mountains.

11. **Parnassus glacialis, But.** (Pl. 3, fig. 5.)

Localities—Nikko, Yezo.
Time of appearance—June, July.

This is a mountain insect. Some specimens are suffused with smoky black, and it varies greatly in markings. The female often has a horny sheath to the abdomen, but I do not think the use of this has yet been discovered.

## Family PIERIDÆ.

12. **Aporia cratægi, L.** (Pl. 3, fig. 7.)

Locality—Yezo.
Food plant—Apple trees.
Time of appearance—Summer.

This is abundant in Yezo, but I have not seen it south of that Island.

13. **Pieris rapæ, L.** (Pl. 3, fig. 6.)

*crucivora*, But.

Localities—All Japan.
Food plants—Cultivated cruciferæ, such as daikon (radish), cabbages, &c.
Time of appearance—March to November.

Varies much in size. The Japanese specimens have been mistaken for *Pieris brassicæ*, *vide* Mr. Elwes, P.Z.S., Nov. 15th, 1881, but this latter species does not occur in Japan. I noticed immense swarms of *P. rapæ* flying across the Bay of Kagoshima this year, but did not see any further south.

14. **Pieris napi, L.** (Pl. 3, fig. 8-A., 8-B.)

*megamera*, But.
*melete*, Men.

Localities—Main Island, Yezo.
Food plant—An uncultivated crucifer, Arabis hirsuta, Scop.
Time of appearance—March to October.

The imago first appears in March, form *megamera;* it is then a very different looking insect from the succeeding broods (form *melete*). It varies in size from $1\frac{3}{4}$ inches to 3 inches.

For many years after I first commenced collecting here, I was surprized to find that what was then known as *megamera*, only appeared once in the year, March and April, after which it entirely disappeared; nearly all the other Pieridæ being many brooded. I was therefore very anxious to ascertain what became of the larva from April until the next autumn, or whether it remained for the whole summer, autumn, and winter in the pupa state. To obtain the unknown larva of a butterfly is a particularly difficult task; the food plant has to be discovered and the females induced to lay their eggs. By spending many days in early spring watching the females, I was at last rewarded by seeing one busily depositing its eggs on Arabis hirsuta, and from these I reared the entirely different form, *melete*. I was not unprepared for this result from my discoveries of a like change of form in *Papilio xuthus* and *xuthulus*, &c.

15. **Anthocaris scolymus, But.** (Pl. 3, fig. 4-A., 4-B.)

Localities—Yokohama, Nikko.
Food plant—Cardamine sylvatica, Sink.
Time of appearance—March, April.

This insect undoubtedly only appears once during the year. There are no allied forms, and it is the only representative of the genus in Japan. I know little or nothing concerning its life history beyond the fact that it feeds upon a bitter cress, common in marshy situations.

16. **Leucophasia sinapis, L.** (Pl. 2, figs. 7 and 8.)

*amurensis*, Men.
*vilibia*, Janson.

Localities—Fujisan, Asama-yama, Yezo.
Time of appearance—July, August.

In the southern parts of the Main Island this is only found on the mountains, but in Nambu and Yezo I believe it inhabits the plains. It is an open question whether *vilibia* is distinct from *amurensis*, and this can only be determined by breeding. As it is not found in the Yokohama district, I have no opportunity of testing this, and must leave it to entomologists more favourably situated. It is probable that *vilibia* and *amurensis* are "dual" forms, if not species. I have figured the two most dissimilar specimens I could find.

17. **Rhodocera maxima, But.** (Pl. 2, fig. 5.)

Localities—Yokohama, Ohoyama, Asama-yama.
Time of appearance—May, July.

This has a much more robust appearance than the following, and contrary to the opinion I have expressed elsewhere (Trans. Asiatic Society of Japan, May 9th, 1883), I now believe it to be perfectly distinct, as, during the year 1885, I captured both *maxima* and *acuminata* freshly emerged at Asama-yama, and was then able to compare them under a favourable aspect, which I had not had the opportunity of doing before. I have frequently obtained males only, in the spring about Yokohama, but never saw a female here, and think they must be strays from the lower mountains in the vicinity. It undoubtedly hybernates.

18. **Rhodocera acuminata, Feld.** (Pl. 2, fig. 6.)

Localities—Nikko, Asama-yama, Yezo.
Time of appearance—July.

This species is only found, where I have collected, at a considerable elevation, but it inhabits the plains in Yezo. Many insects in South Japan are confined to the mountains, but are found lower down the further we go north. I have seen none of the preceding species from Yezo, where it appears to be wholly replaced by the present. In the case of *maxima* and *acuminata* we have an excellent example of the "duality" of species.

19. **Colias palæno, L.** (Pl. 2, fig. 3.)

Localities—Asama-yama.
Time of appearance—July.

This butterfly has a most extensive range, from Iceland to Central Japan, where it has its habitat at an elevation of over 6,000 feet. I have seen it commonly at the Yu-no-taira on Asama-yama. Owing to

the irregular nature of the ground, which is composed of loose, volcanic scoriæ, it is most difficult to capture. It never seems able to stray far from this place, and may be seen beating up and down, but never descending below this bleak and cold locality.

20. **Colias hyale, L.** (Pl. 2, fig. 4-A., 4-B.)

*simoda*, Del Orza.
*erate*, Esp.
*subaurata*, But.
*elwesii*, But.

Localities—Main Island, Yezo.
Food plant—Leguminous plants.
Time of appearance—February to November.

This is one of the most abundant butterflies about Yokohama, and is the first harbinger of spring. It may often be seen flying about a warm sunny bank by the middle of February, when the snow is still on the ground. These are not hybernated specimens, but freshly emerged, as I have often taken them then with their wings hardly dry. The female is dimorphic, having a yellow and a white form. The difference between a summer and a winter specimen is most marked, both in colour and size. It is found commonly both on the plains and mountains. I have figured an exceptionally large female of the late summer brood, and a male of that appearing in February.

21. **Terias multiformis, H. Pryer.** (Pl. 2, fig. 9A, 9B.)

*hecabe*, L.
*mandarina*, Del Orza.
*hecabeoides*, Men.
*sinensis*.
*maresi*, But.
*anemone*, Fel.
*connexiva*, But.
*œsiope*, Men.
*brenda*.
*sari*, Hors.

Localities—Central and South Japan.
Food plant—Lespedeza juncea, Pers.
Time of appearance—March (hybernated specimens) to December.

To the naturalist, this is the most interesting of all the butterflies of Japan, and therefore demands a careful account of its very extraordinary life history, which I will give as fully as I have been able to elucidate it.

In the first place, I find, from observations of my own and fellow workers, that no species of the genus Terias have as yet crossed the Straits of Tsugaru, between Yezo and the Main Island. *Multiformis* is

found southward from Japan to Australia, and westward as far as Africa, but the Main Island of Japan is probably its most northern limit. It is not known in Amurland.

Many years ago, I observed a hybernated female, of the form *mandarina*, depositing its eggs on Lespedeza juncea. From these eggs I was greatly astonished by breeding several of the form *hecabe*, which had been described by Linnæus, and well known for over 100 years. This was so unexpected and contrary to all the then accepted ideas concerning the immutability of species, that I suspected some eggs or larva of *hecabe* had strayed into my breeding cages, and hesitated to publish my discovery without further corroboration. In following years I again and again tried the same experiment, with the same results, and then sent an account to the London Entomological periodicals, where the statement was, and still is, received with incredulity; but, as I am sure, it is a positive fact, and it will be easy for any one who may doubt it to undertake the task of investigation. I know that several eminent describers have spent a lifetime in separating the forms of this species, and they naturally feel annoyance that I should have so outrageously upset their pet theories and proved that they have been engaged in a useless letting down of "bottomless buckets into empty wells and drawing nothing up." A fine illustration of this sort of work is Mr. Butler's paper on the Japanese Terias, published in Trans. Ent. Soc. London, 1880, Part 4, the only really useful part of which is the coloured plate accompanying the paper; it gives a series of forms, all *multiformis*.

By placing half of a brood of larva in a cool place and half in a warm one, I have simultaneously produced a mixture of the two forms, some perfect *hecabe* (hot), and some *mandarina* (cold), at a time of year when naturally only *hecabe* is found. With reference to Mr. Butler's remarks concerning hybrids, Trans. Ent. Soc. London, 1880, Pt. 4, genuine hybrids do actually occur between *hecabe* and *mandarina* naturally. *Mandarina* appears on the cold mountains much earlier than on the plains, and these fly down and mix with *hecabe*, producing one or more broods late in the autumn, of numberless intermediate varieties, showing all transitions between the two parent forms.

This insect is a most excellent illustration of the transmutation of species. If it could be transported to a cold, even climate like England, only the *mandarina* form would be found, and its connection with *hecabe* would not even be suspected, as they differ in every respect as much as any two species of the family; with an increase in temperature in Japan, *mandarina* would disappear, and only the *hecabe* form would be found, as at Singapore and other tropical places where I have collected. The *hecabe* form is one of the butterflies the males of which are supposed to be more numerous than the females, but this is not a fact, as I find, when breeding them, that both sexes are about evenly represented. The males are fond of settling in numbers on damp spots in pathways, or flying about in the open, and are easily captured in large numbers. The females have to be sought after among the herbage and undergrowth, and are much less easily found, and this is the reason of the apparent disproportion of the sexes; the result of the difference in habits of the sexes is seen in the different colour of the males and females, the males are always a bright yellow and the females much lighter, the latter being much less exposed to the action of light. These remarks apply only to the *hecabe* form, and not to *mandarina*. The latter appears during

the colder period, when the habits of the two sexes are more alike, and there is, in the *mandarina* form, less difference in the coloration of the two sexes, a number of specimens then collected at random will be found to show a greater proportion of both.

In the figures, I have given the two extreme forms of *mandarina* and *hecabe*.

22. **Terias læta, Boisd.** (Pl. 2, fig. 10.)

*Terias jægeri*, Men.

Localities—Main Island.
Time of appearance—March to November.

A very rare variety of this, wholly yellow, is sometimes found, a counterpart of *mandarina* to the *hecabe* form of *multiformis*. Although a very common species, I know nothing concerning its life history, and in this respect there is, in Japan, an exhaustless field of most interesting research for the naturalist. The few species that I have, with the limited time at my disposal, been able to study, always yield most interesting and unexpected results.

23. **Terias bethesba, Janson.** (Pl. 2, fig. 11.)

Localities—Main Island.
Time of appearance—Summer.

A very interesting and unvariable species, only appearing during the hot weather. Nothing is yet known of its economy. It is peculiar to Japan.

## LYCÆNIDÆ.

24. **Miletus hamada, Druce.** (Pl. 2, fig. 12.)

Localities—Yokohama, Nikko.
Time of appearance—Summer to October.

About Yokohama this is generally a very local species, being confined to isolated spots. Some specimens are quite black, and others from the mountains have a patch of greyish white on the fore wing. It varies from $\frac{3}{4}$ inch to $1\frac{1}{4}$ inch.

24. **Lycæna (?) ogasawaraensis, H. Pryer.** (Pl. 2, fig. 13.)

Locality—Ogasawara.
Time of appearance—March.

In the month of March, 1878, I visited the isolated Ogasawara Islands (Bonins) on a collecting expedi-

tion. The only butterflies I saw there were *Papilio xuthus*, form *xuthulus*, *Lycæna bætica*, and the present, of which latter I was fortunate enough to obtain five specimens, and, so far as is yet known, the species is confined to this small group of islands. It is very peculiarly coloured, being deep blue above and shining green on the under side of the hind wing, and has very long antennæ.

26. **Curetis acuta, Moore.** (Pl. 4, fig. 1, 2.)

Localities—Tonosawa, Tosa, Atami, Yokohama.
Time of appearance—September.

I have only twice seen this in the Yokohama district, but it is common in the mountains. The under side is a complete contrast to the upper side, being a beautiful shining silvery white. The contrast between the male and female is also very marked on the upper surface, the former being coppery red and the latter blue.

27. **Amblypodia japonica, Murray.** (Pl. 2, fig. 14.)

Locailty—Yokohama.
Time of appearance—September to December and April.

I have sometimes seen this in warm corners in very cold weather, and it undoubtedly hybernates.

28. **Amblypodia turbata, But.** (Pl. 2, fig. 16.)

Locality—Nagasaki.

I owe the example from which the specimen is figured, of this very rare species, to the generosity of Mr. H. Loomis. At present it is almost unique, the only other specimen extant being in the collection of the British Museum.

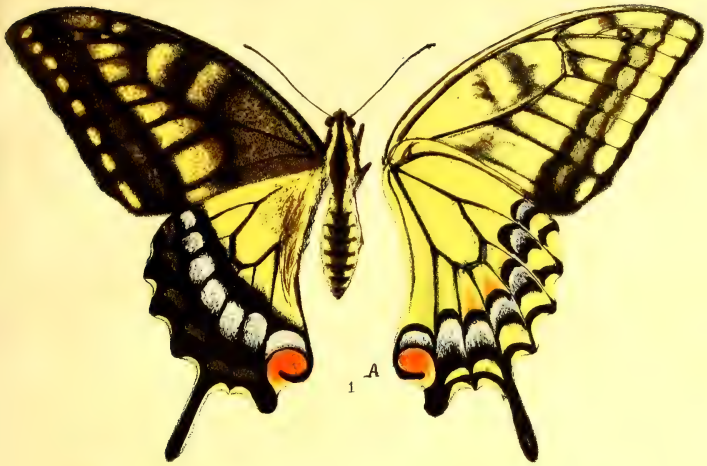
29. **Amblypodia loomisi, H. Pryer.** (Pl. 2, fig. 15.)

Locality—Kanozan, in Kadzusa.

I have much pleasure in naming this interesting species after my friend Mr. Loomis, who has been very successful in capturing one new and one very rare species of this very restricted genus.

The plate almost renders a description unnecessary, but for the sake of uniformity I will give a short *précis* of the species.

Expanse $1\frac{1}{8}$ in.; can at once be distinguished from *japonica* and *turbata* by its much smaller size and grey under side. Upper side, basal half of the fore and hind wing bright blue, remainder of the wing black; fringe of the fore wing dark, hind wing grey; under side, on both the fore and hind wings, the spots characteristic of the Lycænidæ, are united, forming four bands.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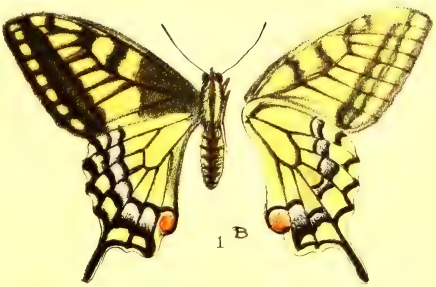
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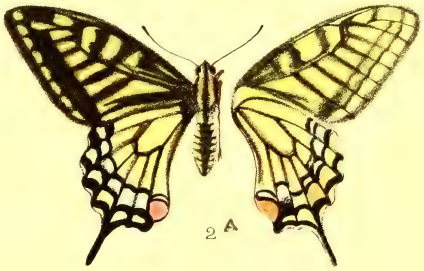
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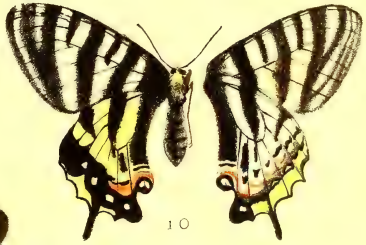
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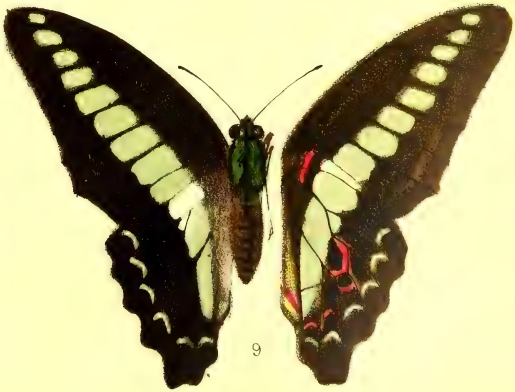
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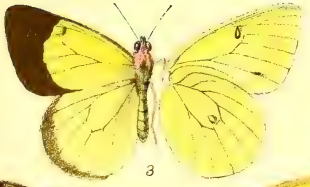
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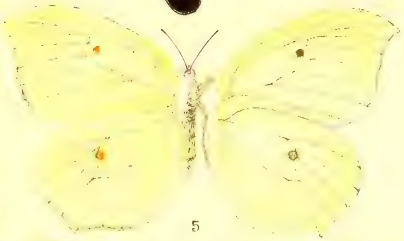
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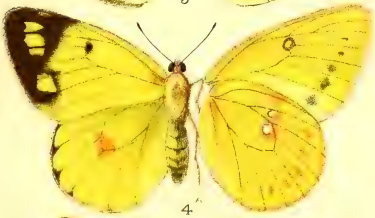
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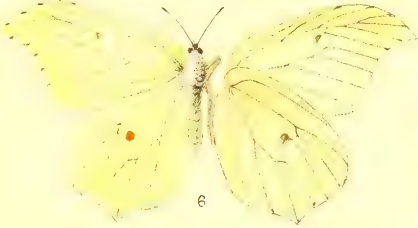
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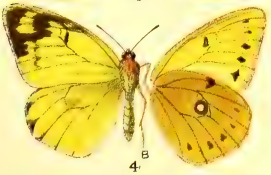
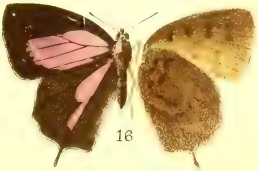
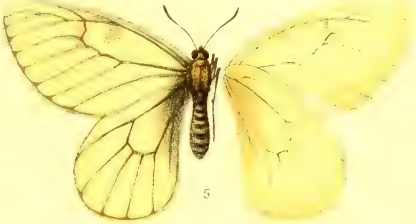

4B

14


16



期節　九月ヨリ十二月乃至翌年ノ四月ニ至ル寒天ノ期節ニ余ハ温暖ナル陰退ノ場所ニ之ヲ得タルコアリ故ニ此種ノ冬眼ヲ爲スハ疑フベカラズ

（二八）アムブリポジヤ、トルバアタ、バツトラ（第貳版第拾六圖）

産地　長崎

此最モ珍奇ナル種類ニ就キ余ノ圖ヲ製スルヲ得タルハエイチ、ルーミス氏ノ恵贈ニ係リテ深ク同氏ニ謝スル所ナリ、此種ノ現今世ニ存スルモノハ英國博物館ノ貯藏ニ屬スルモノヽ外殆ンド此一品ニ止マレリ

（二九）アムブリポジヤ、ルーミシイ、エイチ、プライヤ（第貳版第拾五圖）

産地　鹿野山

余ハ此珍奇ナル種ニ其名ヲ命スルニ當リ余ノ友人タルルーミス氏ノ名ヲ取ルヲ甚ダ悦ブナリ同氏ハ此狹隘ナル屬ノ中ニ此甚タ新奇ナル種ヲ捕獲スルノ榮ヲ得タレバナリ

此寫生ハ殆ンド其解說ヲ要セスト雖モ他ノ例ニ效ヒ暫ク之ニ簡單ナル解說ヲ下サントス擴張セル翅ノ大サハ一インチ八分ノ一ニシテ之ヲ一目「ジヤポニカ」及ビ「トルバアタ」ノ兩種ト區別シ得ルハ其大サノ頗ル小ニシテ且ツ其裏面ノ褐色ナルヲ以テナリ、其前後兩翅ノ表面礎部ノ半バヽ鮮青色ニシテ殘余ノ部分ハ黑色ナリ翅緣ハ前翅ニ於テハ黑ク後翅ニハ褐色ナリ前後兩翅ノ裏面ニ於テ「ヲイシニデイ」族ノ特微タル班點ハ互ニ連合シテ四個ノ條紋ヲ成セリ

品中某ノモノハ全ク黑色ニシテ山間ニ産スルモノハ其前翅ニ灰白色ノ班文一個ヲ有セリ、其大サハ四分ノ三インチヨリ一インチ四分ノ一ニ達セリ

（二五）ライシイナ、(?)ヲガサハラヱンシス、ヱイチ、プライヤ

産地　小笠原群島　（第貳版第拾三圖）

期節　三月

一千八百七拾八年三月余ハ標品採集ノ目的ヲ以テ小笠原ノ孤島（無人島）ヘ渡航セリ、同島ニ於テ目擊スルヲ得タル種類ハ只タ「パピリオ、ズウサス」「ズウスウラス」形「ライシイナ、ベイチカ」及ビ此類ニ過ギズシテ余ハ幸ニ此種ノ五品ヲ採集スルヲ得タリ而シテ從來ノ經驗ニ據レハ該種ハ該小群島固有ノ產タルガ如シ、此種ノ色澤ハ甚タ奇特ニシテ後翅ノ表面ハ濃藍色ヲ帶ビ裏面ハ綠色ニシテ光澤ヲ呈シ而シテ極メテ長キ觸鬚ヲ有セリ

（六二）キユレテス、アキユタ、ムアー　（第四版第一二圖）

産地　塔ノ澤、熱海、土佐、橫濱、

期節　九月

此種ハ山間ニ普通ナル者ナレモ橫濱地方ニテ余ノ之ヲ目擊セシハ只タ二回ニ過ギズ、翅ノ裏面ハ美麗ナル銀白色ヲ帶ヒテ表面ハ全ク之ト相反セリ、雌雄ニ隨テ其着色ノ異ナルモ亦著シクシテ雄ニ於テハ銅色ヲ帶ビ雌ニ在リテハ藍色ヲ呈セリ

（七二）アムブリボジヤシヤ、ポニカ、モオレイ　（第貳版第拾四圖）

產地　橫濱

産地　本洲

期節　三月ヨリ十一月ニ至ル

「マルチフォルミス」ノ「ヘケイプ」形ニ「マンダリナ」ノ補欠形アルガ如ク此種ノ中ニ全ク黄色ニシテ甚ダ稀有ナル變種ヲ發見スルコアリ、之レ甚ダ普通ノ種ナリト雖モ余ハ其活狀ニ就テ一モ之ヲ報スルヲ得ズ而シテ此關係ニ就キ日本ハ實ニ博物學者ニ對シ最モ快樂アル研究ヲ遂クベキ無盡藏ナリ、余ハ限リアルノ日子ヲ以テ其研究ニ就事スルヲ得シハ僅々數種ニ過ギサレドモ之ニ就キ常ニ極メテ愉快ナル且ツ意外ノ結果ノミヲ得タリ

（第貳版第拾一圖）

（三二）テリアス、ペセスパジヤンソン

産地　本洲

期節　夏季

此種ハ實ニ珍奇ニシテ且ツ變化ノ少ナキモノニシテ只タ炎暑ノ期節ニノミ現出ス其活狀ニ就テハ一モ之ヲ報導スルヲ得ズ是レ日本特有ノ種ナリ

ライシニデイ族

（四二）ミレタス、ハマダドルウス

（第貳版第拾貳圖）

産地　横濱、日光、

期節　夏季ヨリ十月ニ至ル

此種ハ横濱近傍ニ於テ常ニ一定ノ局部ニノミ發見セラルベキ眞ニ一種ノ地方種ナリ、標

英國ノ如キ氣候寒冷ナル地ヘ移スルヿアラバ只ダ「マンダリナ」形ノミヲ產出シテ「ヘケイブ」形トノ關係ハ同族中他ノ二種間ニ存スル差違ヲ視ルガ如ク更ニ之ヲ疑フベカラザルニ至ルベク又日本ニテ氣候ノ温度增加スルヿアルト爲セバ「マンダリナ」形ハ消滅シ恰モ余カ嘗テ採集セル新嘉坡（シンガポール）其他ノ熱帶地方ニ於ケル如ク單ニ「ヘケイブ」形ノミヲ產出スルニ至ルベシ「ヘケイブ」形ハ雌ヨリモ遙ニ多數ノ雄ヲ產出スル蝶類ノ一形態ト假定セラレシト雖モ是レ事實ト相反スル者ノ如シ卽チ余ガ之ヲ飼養スルニ當リ雌雄殆ンド等分ノ數ヲ得ルヲ得タレバナリ、雄ハ好ンデ經路ノ濕地ニ群居シ或ハ公然飛翔スルヲ以テ容易ニ其多數ヲ捕獲スルヲ得、雌ハ草木深叢ノ間ニ非ザレバ之ヲ獲ベカラスシテ目ニ觸ルヽヿ甚ダ少ナシ是レ前ノ如ク人ヲシテ兩性ノ數ニ不同アルヲ感セシムルノ原因タルニ似タリ雌雄ノ習性上ニ存スル差違ノ結果ハ其色澤ノ互ニ相異ナルヲ以テ之ヲ視ルベシ卽チ雄ハ其色常ニ鮮黃色ニシテ雌ハ日光ニ暴露スルヿ稍々少ナキカ故ニ淡黃ニ就テハ然色ヲ呈セリ、蓋シ是等ノ諸項ハ只タ「ヘケイブ」形ニノミ適用スベキ者ニシテ「マンダリナ」形ルニアラス、夫レ「マンダリナ」形ハ寒冷ナル期節ニ現出スルモノニシテ其雌雄ノ習性モ略々同シク且ツ色澤ノ差違モ甚タ少ナシ而シテ亂雜ニ採集セル標品中ニモ雌雄ノ割合不同ナラザルヲ示ス

（二二）

余ハ「マンダリナ」及ビ「ヘケイブ」形ノ最モ卓越ナルモノ二種ヲ圖ニ示セリ

テリアス、レヱタ。ポイスジユアル

ジエゲリイ。メニトレヱ

（第貳版第拾圖）

此事實ノ正確ナルヲ保スルモノニシテ之ニ疑ヲ容ルヽモノハ宜シク其試驗ヲ施シ以テ其正否ヲ質スニ容易ナルベシ、世間ノ卓越ナル學士輩ハ此種ノ形態ヲ識別セントシテ其一生間ヲ徒費セシコアルハ余ノ正ニ知ル所ナリ而シテ彼輩ノ自負愛賞スル所ノ理論ハ一朝余ノ爲メニ極論說破セラレ眞ニ其事業ノ徒勞ニ屬セシコハ恰モ水ノ涸レタル井中ニ底ノ脫シタル鉤瓶ヲ投ジ以テ一滴ヲモ得ザリシニ均シキガ故ニ其心ニ不快ヲ感スルハ當然ノコト謂フベシ、一千八百八拾年出版倫敦昆蟲學協會報告第四號ニ揭載セルバットラ氏ノ日本産「テリアス」ノ說ノ如キハ即チ此類ニ屬スル者ニシテ同書ノ眞ニ有用ナル部分ハ之ニ附セル着色ノ寫生圖ナリ是ニハ「マルチフォルミス」ノ凡ル形態ノ種類ヲ載セテ殆ンド洩ス所ナシ

自然ニ任スレバ啻ニ「ヘケイブ」ノミヲ産スル期節ニ際シ一群ノ螟蛉ヲ折半シテ一半ヲ寒冷ナル處ニ置キ他ノ一半ヲ温暖ナル處ニ置キ以テ之ヲ飼養セシニ余ハ同時ニ二形態ノ混交セル成蟲ノ一群ヲ得タリ就中温暖ノ處ヨリ完全ナル「ヘケイブ」ヲ生ジ寒冷ナル處ヨリ「マンダリナ」ヲ産セリ、一千八百八拾年出版倫敦昆蟲學協會報告第四號ニ揭載シテ雜種ニ關セルバットラ氏ノ意見ニ據レバ眞ノ雜種ナルモノハ「ヘケイブ」ト「マンダリナ」ノ兩種間ニ在リテ自然ニ現存スルモノトセリ、「マンダリナ」種ハ寒冷ナル山上ニ在リテ平原ニ於ケルヨリモ早ク産出シ漸次ニ下山シテ「ヘケイブ」形ト混交シ以テ晩秋ニ至ルマテ數回ノ生殖ヲ爲ス其無數ノ中間種ヲ比較スルニハ此兩種ノ母形間ニ順次ノ階級アルヲ視ルナリ此種ハ種類變遷ノ理ヲ說明スルニ極メテ適當ノ引証ト爲ルモノナリ、今若シ假ニ此種ヲ

サリイ。ホース

産地　日本中央及ビ南方

食草　鐵掃箒（メドハギ）

期節　三月ヨリ十二月ニ至ル（三月ニ現ハルモノハ冬眠セルモノナリ）

此種ハ博物學者ニ對シ凡ソ日本産蝶類中ノ最モ快樂ヲ與フルモノニシテ其生活ノ非凡ナル來歴ニ就テハ詳細ノ說明ヲ要スルガ故ニ余ハ可及的其詳說ヲ是ニ悉クサントス

抑々余ハ實驗ニ由リ同僚輩ト共ニ「テリアス」屬中一モ未タ嘗テ北海道ト本洲間ノ津輕海峽ヲ越ヘタルモノナキヲ發見セリ「マルチフオルミス」種ハ日本ヨリ濠洲ニ至ルマデノ南部地方並ニ遠ク亞非利加ニ至ルマデノ西方ニ産スルモ恐ラク日本ノ本洲ハ其産地ノ北域タルベシ、アムアランドニハ未タ其産アルヲ聞カズ

余ハ數年前冬眠ヲ爲セル「マンダリナ」形ノ雌ガ鐵掃箒ノ葉上ニ卵子ヲ産附スル所ヲ見出セリ、此卵子ヨリ余ハ飼養術ニ依リテ意外ニ「ヘケイブ」形ノモノ數多ヲ得タリ「ヘケイブ」形ハリンネアス氏ノ既ニ說明セルモノニシテ百有餘年間已ニ世人ノ熟知スル所ノモノナリ、此結果ハ余ノ更ニ思ヒ設ケサル所ニシテ當時其種類ノ變遷セザルヿニ就キ世間一般ノ輿論ト大ニ反對ヲ表セリ故ニ余ハ「ヘケイブ」形ノ卵子若クハ蝮蛉ノ或ハ誤テ飼養函中ニ入リシナランヲ疑ヒ他日ノ研究ヲ待チテ此發見ノ結果ヲ世ニ公布スルヿヲ暫ク猶豫セリ、爾來再三此試驗ヲ行ヒシニ常ニ同一ノ結果ヲ得タリ是ニ於テ其事實ヲ倫敦昆蟲學雜誌ニ揭載セシニ甲論乙駁今ニ至リテ尙ホ之ヲ信ズル者ナキカ如シ然レモ余ハ素ヨリ

食草　荳料植物

期節　二月ヨリ十一月ニ至ル

此種ハ横濱近傍ニテ最モ多數ナル蝶類ノ一ニシテ春時現ハルヽ種ノ前驅者タリ、之レ二月中旬尚ホ積雪ノ地上ニ殘レルニ際シ日光ニ浴セル温暖ノ堤上ニ飛翔スルヲ屢々見ル所ナリ、此等ハ冬期ヲ經過シ來レルニ非ズ新ニ羽化セルモノタルハ余ガ屢々辛フシテ乾固セル所ノ翅ヲ具フルモノヲ得シニアレバナリ、其雌ニハ黄色ノ者ト白色ノモノヽ二種アリ、其夏種ト冬種トハ大ニ其色澤及ビ大サヲ異ニセリ、平原山間共ニ之ヲ産ス、余ハ夏末ニ羽化セル極メテ大ナル雌ト二月ニ現出セル雄ノ二品ヲ寫生ニセリ（第貳版第九圖AB）

（一二）

テリアス、マルチフオルミス、エイチ、プライヤ

ヘケイプ、リン子アス

マンダリナ、デル、チーズ

ヘカベオイデス、メニトレヱ

シ子ンシス

マレシイ、パツトラ

ア子モ子、プヱルダ

コン子キシヴア、パツトラ

エイジヲツプ、メニトレヱ

プレンダ、

原ニ産ス、日本南方ニ在リテハ山間ニ限ラルヽモ漸次北方ニ進ムニ從ヒ平原ニ産スルノ種類少ナカラス、余ハ一モ前種ノ北海道産ナル者ヲ得ル能ハサリシヲ以テ考フレバ同地ハ全ク此種類ニ由テ占居セラレタルモノヽ如シ「マキシマ」及ビ「アキユミナタ」ノ如キハ二樣形態ノ適例ト爲スベシ

（九一）

コリアス、バレイノリン子アス

（第貳版第三圖）

産地　淺間山

期節　七月

此種ハ其産地極メテ廣クアイスランド島ヨリ日本中央ニ至ルマデ海上六千フィート餘ノ高處ニ産ス、余ハ淺間山湯ノ平ニテ常ニ之ヲ見ルヿヲ得タリ、此地ハ輒弱ナル火山石ヨリ成リ地形凹凸極マリナキヲ以テ之ヲ捕獲スルニ頗ル困難ヲ極メリ、此種ハ其棲處ヲ離レ遠ク他方ニ彷徨セザルモノヽ如ク常ニ上昇下降シテ飛翔スルト雖モ決シテ此寒氣凜烈ナル地ヨリ下降スルヿナキニ似タリ

（〇二）

コリアスハイアル。リン子アス

シモダ。テル「ヲーズ

ユレイト。エスペンシヤイ

サブアウラタ。バツトラ

ユルウエシイアイ。バツトラ

（第貳版第四圖ＡＢ）

産地　本洲、北海道

ハ單ニ飼養術ニ依リ決定スルヲ得ベシ、此種ハ横濱地方ニ産出セサルヲ以テ余ハ自ラ之ヲ試驗スルノ機會ヲ得ザリキ故ニ更ニ便宜ノ地ニ於ケル昆蟲學者ニ之ヲ讓ラントス、若シ「ウイリビヤ」ト「アミユレンシス」ハ異種類ニアラザリセバ恐ラクハ二樣形態ノ種ナルベシ余ハ採集セル其標品中ニテ最モ形態ヲ異ニセル二品ヲ是ニ寫生セリ

（七一）ロドセラ、マキシマ。バットラ　（第貳版第五圖）

産地　横濱、大山、淺間山、

期節　五月、七月、

此種ハ次ニ揭載スルモノヨリ頗ル肥太ナル外貌ヲ有セリ而シテ余ハ嘗テ（一千八百八拾三年五月九日出版日本亞細亞協會報告書ヲ見ヨ）陳述セル意見ニ反シ今日ハ右兩種ノ全ク異種ナルヲ信スルナリ是レ余ハ一千八百八拾五年信州淺間山ニ於テ新ニ化生セル「マキシマ」及ビ「アキユミナタ」ノ兩種ヲ捕獲シ以テ之ヲ比較スルガ爲メニ未曾有ノ好機會ヲ得タレバナリ、余ハ横濱ニテ春時單ニ其雄ノミヲ得シ而シテ屢々ナルモ未ダ嘗テ其雌ヲ得ザリシ所以ノモノハ惟フニ之レ其近傍ノ丘陵ヨリ彷徨シ來ルモノヽ、外ナラザルガ如シ、此種ノ冬眠ヲ爲スハ疑フベカラザルナリ

（八一）ロドセラ、アキユミナタ、プエルダ　（第貳版第六圖）

産地　日光、淺間山、北海道

期節　七月

此種ハ余ガ蒐集シタル成績ニ據レバ專ラ高處ニノミ發見スルヲ得シモ北海道ニテハ平

リ、余ハ早春數日間ヲ費ヤシ以テ終ニ一雌ノ卵ヲ南芥菜ノ葉上ニ産附スル所ヲ目撃スルノ榮ヲ得タリ而シテ之ヲ孵化スルニ當リ全ク異形ノ「メレット」種ヲ得タリ、余ハ「パピリオ、ズウサス」及ビ「ズウスウラス」ニ同樣ノ變遷アルヲ發見セルヲ以テ此成績ノアランハ豫メ歸セザルニ非ザリシナリ

（五一）アンソカリス、スコレマス。バツトラ（第三版第四圖AB）

産地　横濱、日光、

食草　碎米薺（タチツケバナ）

期節　三四月

此種ハ一週年間ニ只タ一回ノ現出ヲ爲スヿ疑フベカラズ、之ト類似ノ形態ハ更ニ他ニ見サル所ニシテ「スコレマス」ハ日本ニ産スル此屬ノ全ク代表者ナリ、余ハ其活狀ニ就キ通常濕地ニ自生スル碎米薺ノ葉ヲ食トスルヿノ外敢テ之ヲ知ラズ

（六一）リユコフアシヤ、シナピス。リン子アス（第貳版第七八圖）

アミユレンシス。メニトレヱ

ウイリビヤ。ジヤンソン

産地　富士山、淺間山、北海道

期節　七八月

此種ハ本洲ノ南方ニテハ單ニ山間ノ産ナルモ陸中國南部及ビ北海道ニテハ平原ニ産スルモノト信ズ「ウイリビヤ」ト「アミユレンシス」ハ全ク異種ナルベシトノ公論アリ而シテ是

此種ハ其大サ甚タ不同ナリ、一千八百八十一年十一月十五日出版ノ動物學會報告中ニ掲載セル如クヱルウヱス氏ハ此種ヲ以テ「ピイリス、ブラシツケイ」ト誤解セリ然レモ「ブラシツケイ」ハ全ク日本ニ産セズ余ハ本年鹿兒島灣ヲ飛翔シ渡レル「ラアペヱ」ノ數群ヲ見タリ然レモ同地ヨリ南方ニハ之ヲ見タルコトナシ

（四一）

ピイリス、ナツピイリン子アス

メガメラ、パツトラ

メレツト、メニトレヱ

産地　本洲、北海道、

食草　南芥菜（ハタザホ）ノ如キ野生ノ十字花科植物

期節　三月ヨリ十月ニ至ル

此種ノ三月始メテ生出スル成蟲ハ「メガメラ」形ニシテ爾後續出スル所ノ「メレツト」形トハ大ニ其外貌ヲ異ニセリ、其大サハ一インチ四分ノ三ヨリ三インチニ達セリ

余ガ日本ニ於テ蝶類蒐集ニ就事セシ以來數年間他ノ「ピイリデイ」種ハ皆毎年數回ノ生殖ヲ爲スモ當時「メガメラ」ト稱セラレタル者ハ一年中三四兩月ノ間ニ唯タ一回現出スル而已ニシテ其餘ハ絶エテ目ニ觸レサルヲ甚タ不審ニ思ヘリ、故ニ余ハ其蝮蛉ノ四月ヨリ次春ニ至ルマデ如何ナル成行ヲ爲スヤ或ハ一旦蛹形トナリテ餘年ヲ送ルモノナルヤニ就キ頗ル其理會ニ苦メリ、抑モ不分明ナル蝶類ノ蝮蛉ヲ養育セントスルニ當リ特ニ難事タルハ之カ爲メニ適當ノ食草ヲ見出スベキコト雌ヲ誘導シテ卵子ヲ産附セシムルトニア

（第三版第八圖A B）

産地　北海道、日光、
期節　六七月
此種ハ山間ニ産スルモノナリ、或種ニアリテハ煤黑色ヲ呈シ而シテ其班文モ頗ル種々アリ、雌ハ其腹部ニ往々一ノ角鞘ヲ具セリ而レモ其用ノ果シテ何ニ在ルヤ余ハ未タ其發見セラレタルヲ聞カズ

ピイリデイ族

(二)アポリア、クラテイジイ(リン子アス)　(第三版第七圖)
産地　北海道
食草　林檎樹
期節　夏季
此種ハ北海道ニ許多産出スルモ余ハ同島ヨリ以南ニ之ヲ見タルヿ莫シ

(三)ピイリス、ラアペエ(リン子アス)　(第三版第六圖)
クルシウオラ(パツトラ)
産地　日本全國
食草　萊菔(ダイコン)、甘藍(カンラン)等ノ如キ栽培ニ係レル十字花科植物
期節　三月ヨリ十月ニ至ル

期節　五月及ヒ夏季

此種ハ日本産蝶類中ノ最大ナルモノニテ余ハ九州以北ニ未タ之ヲ見出サズ、其雄ノ裝飾ハ其雌ニ比スレバ稍々粗ニシテ純黒色ヲ帶ビ前翅ノ礎部ニ淡赤色ノ班文ヲ具フ、雌ハ甚ダ著明ニシテ其色澤ノ美麗ナルニ因リ其飛翔ノ際ハ眞形ヨリ更ニ大ナルモノヽ如シ、其尾ヲ有スル者ハ支那ニ産スルモ日本ニハ未ダ之ヲ得タルヿ莫シ、又余ノ經驗ニ據レバ日本産ノ雌ハ支那産ニ比スレバ更ニ黒色ヲ帶ベリ

（九）パピリオ、サアペドン。リン子アス　（第壹版第九圖）

産地　本洲

食草　タブノキ

期節　四月ヨリ夏末ニ至ル

此種ハ頗ル多ク産出ス、其蝋蛉ハ常磐木タル「タブノキ」ノ嫩葉ヲ食トシ其色澤ハ該樹ノ嫩キ綠葉ニ彷彿タリ

（一〇）リユドルフイア、プジロイ。エルスク　（第壹版第拾圖）

産地　北海道、岐阜

期節　四月上旬

此種ハ甚ダ稀品ニシテ余ハ未タ其完全ナル者ヲ見タルヿナシ、之レ早春高山ニ産スルモノナリ

（一一）パルナスサス、グラシアリス。パツトラ　（第三版第五圖）

（第三版第八圖）

（六）パピリオ、アリシノス。クラッグ

産地　本洲

食草　木防己（アホツヅラフヂ）

期節　四月ヨリ夏末ニ至ル

此種ノ雌ハ支那及ヒ琉球諸島ニテハ二樣形態ニシテ時ニ或ハ殆ンド雄ノ如キ黑色若クハ淺黃色ヲ呈スルモノアレモ本洲ニテハ其淺黃色ナル者ノ外嘗テ之ヲ獲タルコト莫シ、其雄ノ生活スル間ハ一種麝香樣ノ佳香ヲ發ス、其雌モ亦稍ヤ其香氣ノ淡薄ナルモノヲ發スレモ余ハ雌ノ香氣ノ佳良ナルニ反シテ不快ヲ感セリ、此種ハ〔パピリオ〕類中最モ多產スルモノニシテ之ヲ捕獲スルコト容易ナリ、其蛹ハ稍々〔桑實〕ノ成熟シタル者ニ似テ其蛹ハ極メテ美麗ナル彫刻紋ヲ有セリ

（七）パピリオ、ヘレナス。リン子アス　（第貳版第二圖）

產地　長崎、土佐、

期節　五月及ヒ夏季

此種ハ本洲ノ南方ニ產スルモノニテ余ハ四國以北ニ之ヲ見タルコト莫シ、其後翅ノ大ナル白班文ハ甚ダ著明ナリ、其飛翔ハ銳敏迅速ニシテ絕エズ同所ニ去來スルノ性アリ其雌ハ稀ナリ

（八）パピリオ、メンモン。リン子アス　（第貳版第一圖）

產地　長崎

種中ニテ最モ遠ク北方ノ域ニ蔓延スルモノナリ、之ヲ寫生スルハ極メテ難事ナリ、其螟蛉ハ頗ル「パピリオ、ズウサス」種ニ似タレモ成蟲ハ甚ダ之ニ異ナレリ

（第三版第一圖）

（四）パピリオ、デメトリアス。クラマ

産地　本洲

食草　枸橘（カラタチ）

期節　四月ヨリ夏末ニ至ル

此種ハ「マケヲン」ノ「ズウサス」ニ於ケルト正ニ相反シテ其螟蛉ハ頗ル前二種ノ者ニ似タリ其雄ノ後翅ニハ廣楕圓形ノ帶綠白色ノ班文ヲ以テ裝飾セラルヽモ前翅ノ爲メニ陰蔽セラレ常ニハ之ヲ認ムルヿ能ハス、然レモ其雄ガ雌ノ愛ヲ買ハントスルニ當リ之ヲ露出ス、デメトリアス」ト次ノ「マシレンタス」トハ恐ラク二樣形態ノ種ナラン

（第三版第貳圖）

（五）パピリオ、マシレンタス。ジヤンソン

産地　横濱ニハ稀品トス而レモ本洲ノ諸山ニハ許多ヲ產ス

期節　五月ヨリ夏季ノ際トス

此種ノ雌ハ甚ダ稀ニ得ルモノニシテ其雄ハ恰モ前種ノ如キ裝飾ヲ有シ其始メテ孵化スルモノハ往々極メテ矮小ナリ余ハ圖ニ表ハセル雌ノ半バニ過キサルノ雄ヲ捕獲シ得タルヿアリ、然レモ未タ其螟蛉ヲ發見セルヿナシ、此種ハ殊ニ百合花ヲ實ラシムル爲メニ良媒者タルニ適スルヿハ即チ常ニ其花間ニ徘徊シテ自己ノ長キ後翅若クハ尾上ニ其花粉ヲ携帶スルヲ以テ視ルベシ

ズウスウラス。プレマ

産地　本洲

食草　枸橘（カラタチ）　雌椒（イヌサンセウ）

期節　三月ヨリ夏末ニ至ル

此種ハ前種ノ如ク早春現ハルヽモノヲ「ズウスウラス」形トナシ（第貳圖A）夏時ニ現ハルヽモノヲ「ズウサス」形トナス（第貳圖B）、「マケヲン」種ハ草葉ヲ食餌トスルモ「ズウサス」種ハ樹葉ヲ食餌トスルモノニシテ此兩種ノ蝶蛉ハ外貌甚タ異ナリ其差違ハ成蟲ヨリ此幼蟲ノ期節中ニ最モ著シ「ズウサス」種ノ雌ニハ二樣ノ形アリ一ハ淡黃色ニシテ一ハ更ニ濃黃色ヲ呈セリ

（三）パピリオ、マアケアイ、メニトレヱ　（第壹版第三圖）

デハアーニ。フヱルダ

ビアノル。變種ジヤポニカ。バットラ

チユタナス。フヱントン

産地　橫濱、北海道、及ビ本洲ノ諸山

食草　枸橘（カラタチ）、其他芸香科ノ諸木

期節　四月ヨリ夏末ニ至ル

此種ハ秀美ナルモノニシテ其色ニ綠色紫藍色等ノ數種アリ就中其後翅ニ赤キ班點ノ列ヲ具フルモノト否ラサルモノトアリ、其大サ幷ニ班紋ニモ亦種々アリ、之レ黑色「パピリオ」

サテイリデイ
ヘスペリデイ

パピリオニデイ族
パピリオ屬

(一)パピリオ、マケヲン。リン子アス
アジアチカ。パツトラ
ヒツポクラテス。プエルダ
(第壹版第壹圖AB)

産地　本洲、北海道、
食草　培養ノ繖形科植物即チ胡蘿蔔(ニンジン)芸香(ウイキヤウ)。
期節　三月ヨリ夏末ニ至ル

此種ノ成蟲ハ三月ニ至リ前年ノ秋末ニ全ク其食餌ヲ終ヱタル蛹蛉ヨリ化生スルモノニシテ此月ニ出ルモノハ常ニ矮小ニシテ色澤淡シ之ヲ「マケヲン」形トス(第貳圖)、是レヨリ夏季ニ入リ八月ニ至ルマデニ順次孵化スルモノハ肥太ニシテ色澤モ濃カナリ之ヲ「ヒツポクラテス」形トス(第壹圖)、此種ハ頗ル許多産スルモノニシテ往々胡蘿蔔ノ葉ヲ蝕害スルアリ

(二)パピリオ、ズウサス。リン子アス
(第壹版第貳圖AB)

余カ此所見ヲ開陳スルニ當リ單ニ標品室內貯藏ノ品ノミニ就キテ研究スル所ノ所謂井蛙博物學者ヨリ若干ノ駁撃ヲ受ケタリ但シ野外探究者ト著述者トノ爭論ハ寧ロ苛酷ニ過クルナルベシ

近來世間ニ提出セラレタル蝶類分科ノ新法鮮カラス然ルニ本篇ニ於テハ其數多ノ缺點アルニモ拘ハラス依然舊法ヲ襲用シテ敢テ之ヲ肯セザル所以ノモノハ他莫シ之レ余ノ目的ヲ達スルニ充分ナル便宜ノ別ニ自ラ存スルアルヿヲ深ク慮レバナリ

余ノ所有ニ屬スル標品ノ名ハ悉クバツトラ及ビオーベジヤンソン兩氏ノ撰ニ係レリ故ニ其名稱ノ謬誤ニ就キ余ハ其責ニ任セザルナリ然レモバツトラ氏ノ考定ニ依リテ異種トセラレタルモノヽ中ニハ爾來其已ニ久シク世ニ知ラレタル種類ノ變形タルヿヲ發見スルヲ得タレバ宜ク此處ニ注意アランコヲ要シ而シテ余ハ此等ノ誤ヲ訂正シ得タルモノハ之ヲ異名トシテ目錄中ニ揭載セリ

日本產蝶類ハ左ノ諸族ノ如シ

| | |
|---|---|
| パピリオニデイ | 拾壹種 |
| ピイリデイ | 拾貳種 |
| ライシニデイ | 三拾六種 |
| レモニアイデイ | 壹　種 |
| ニムフアリデイ | 三拾八種 |
| ダナイデイ | 壹　種 |

年々稀有ニ發現スル氣候ノ變化ト併セテ其地理學上ノ所謂位置ト地形トニ由來スルモノヽ如シ、此土ハ此ニ棲息スル種類ノ生存競爭ヲナスガ爲メニ恰モ一戰場タルヿ特ニ昔日ニ限ラス今尙ホ然リ、地質學上ヨリ推考スレバ當國ノ諸島ハ昔時大陸ノ遺跡ニシテ高嶺ノ山脈ニ於ケルガ如ク海面上ニ突出セシハ未タ遠キニ非サルベク今日地圖ニ視ルカ如キ千島群島ト其地勢同一ニシテ此古嶺間ニ存セル間隙ハ近時火山ノ作用ニ依テ漸ク充塞セラレタルモノト信スルナリ

日本動物類ノ舊北地方ニ屬スルハ確乎タルヿナリ然レモ又東洋地方ヨリ渡リ來タルモノ寡ナカラス、當國ニハ熱帶、温帶、及ビ寒帶ノ種類同地方ニ於テ互ニ雜居シテ就中許多ノ者ハ種々ノ行路ヲ經テ尙ホ陸續渡來スルヲ見ル、是レ日本動物類ニ他ノ特徵ヲ與フルノ原因タルヤ疑フ可カラズシテ余ハ是等ニ二樣形態ノ語ヲ附シ以テ注意ヲ促セリ、斯ノ如クニ其種類ノ交通連續スルヿハ其事實ニ就キ正ニ明瞭ナル所ノ證アリ即チ某ノ種類ニアリテハ別ニ視ルベキノ異狀ナキモ他ノ種類ニアリテハ極メテ確實ナル異點ヲ存セリ是レ其前者ハ平素ノ來住ニ依リ其祖宗ノ模形ヲ失ハス連綿トシテ眞種ヲ產出シ得ルモ其最モ著明ナル差違ヲ現出スル所ノ後者ハ久シク孤立シテ交通ヲ絕チシ故ナルベシ、蝶類ハ總シテ其体ノ構造ト徘徊スルノ習性アルトニ因リ廣遠ノ地上ニ蔓延スルヲ得且ツ僅々一週年ノ間ニ數回ノ生殖ヲ遂クル者多キヲ以テ變形態ノ數多ナルハ他動物ノ上ニ位スルヿ數等ニ下ラズ、是レ其絕エズ生活ノ變狀ニ接シ以テ古今不滅ノ生存競爭ヲ爲ス所以ナリ

# 日本蝶類

## 鱗翅科

### 蝶類小科

凡ソ鱗翅科ヲ二分シテ「ロパロセラ」及ビ「ヘテロセラ」ノ二小科ト爲ス、甲ハ即チ蝶類ニシテ乙ハ即チ蛾類ヲ總括ス、其蝶類ト蛾類トヲ區別スベキ要點ハ略ボ下ノ如シ、蝶類ハ殆ンド悉ク晝間飛翔スルモノニシテ、常ニ其觸鬚ノ尖端多少肥太ナルモノヲ有シ、蛾類ハ晝夜並ニ飛翔スルヲ得ルモノニシテ概子單一ナルカ若クハ櫛齒狀ノ觸鬚ヲ有ス蓋シ必スシモ之ヲ以テ凡例トスベカラズ則チ蛾類ノ數族中ニハ儘々觸鬚ノ尖端肥太ナルモノアレバナリ

本篇ニ論スル所ハ單ニ蝶類ニ止マルト雖モ日本諸島ノ各地ニ於テ其種屬ニ就キ研究セル十有六年間ノ功勞ニ出テタルナリ

日本産蝶類ノ研究ハ啻ニ昆蟲學者ノ爲メ而已ナラズ、他ノ學士輩ノ爲メニモ亦其娛樂鮮少ナラズ、當國ニ於テハ同種變形ノ事實ニ就キ爭フベカラザルノ證據アリ日本産蝶類中ニハ毎歲四季ノ異ナルニ隨ヒ交々明確ナル異形ヲ呈スル者アリテ是等ノ同種變形ハ同族中ノ異種ヨリ更ニ其差違ノ著シキ者往々之レアリ、余ハ飼養術ヲ以テ斯ノ如キ同種變形ハ其蛹蛉ノ期節中之ガ感受スル所ノ温度ニ起因スルコヲ證明スルヲ得而シテ人爲的ニ其變形ヲ産出セシムルコヲ得タリ、故ニ余ハ之ヲ名ケテ季候形態ト稱セリ、此ニ依リテ之ヲ觀レバ日本ニ此奇異ナル季候形態ノ自然ニ現出スル所以ノモノハ第一當國ニ於テ

# THE

# BUTTERFLIES OF JAPAN.

## PROSPECTUS.

MR. DISTANT'S excellent Rhopalocera Malayana has suggested to me to attempt a similar illustrated book on the Butterflies of Japan, which I purpose calling The Rhopalocera Nihonica. Although I cannot hope to produce as complete a work as MR. DISTANT'S, I trust my endeavours will meet with the approval and support of the Public

The Rhopalocera Nihonica will be published in Three Parts, containing 3, 3, and 4 plates, respectively, and the price will be Twelve Dollars for the entire Work. It will be of a size uniform with the Rhopalocera Malayana, and will contain 167 coloured figures, embracing all the authentic Japanese species known to me.

I have endeavoured to bring out, prominently, the great amount of variation and also the strange *temperature* forms, of the Japanese butterflies. All the illustrations have been drawn and lithographed by Native artists, and although it is the first work of the kind executed in Japan, I believe it will be found, in this respect, to compare most favourably with Foreign publications.

The letterpress will be in both languages, English and Japanese, and, together with the plates, will be printed on Japanese "untearable" paper.

H. PRYER, C.M.Z.S.

No. 127, Bluff,

YOKOHAMA, 19th November, 1886.